Phonetic variation and phonological phrasing: does the Accentual Phrase exist in Italian?

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Within the Autosegmental-Metrical (AM) Theory of intonation (Pierrehumbert, 1980, inter alia), tunes are represented as a sequence of one or more pitch accents followed by a phrase accent and a boundary tone. Phrase accents and boundary tones generally occur at the end of phrasal constituents, such as the intermediate, the intonation or the accentual phrase. Nuclear accents are positionally defined as the last and more prominent accents in the intermediate phrase, immediately preceding a phrase accent. In Standard Italian, the nuclear accent has been defined as “the rightmost fully-fledged pitch accent in the focussed constituent” (Grice et al., 2005, pg. 380). Moreover, the number and the definition of the phrasing levels in this language are still quite controversial. In fact, whereas both the intonation and the intermediate phrase are well attested in many Italian varieties (Grice et al., 2005), there is yet no tonal evidence for the existence of phrasing constituents smaller than the intermediate phrase. However, within a different and less recent approach (Nespor & Vogel, 1986), it has been proposed that a prosodic constituent immediately below the intermediate phrase might be tonally marked in Italian, i.e. the phonological phrase (φ), which includes an independent lexical head plus all its complements on its non-recursive side (e.g. la mamma, “the mom”, il benevolo manovale “the benevolent worker”). Moreover, evidence for a tonal constituent smaller than the intermediate phrase, the Accentual Phrase (AP), whose domain roughly corresponds to that of φ, has been found for example in Korean (Jun, 1993) and French (Jun & Fougeron, 2002), or even in stress languages such as Arabic (Hellmuth, in press).

In this work, acoustic data are reported in which we report on evidence for the tonal marking of a prosodic domain which might be similar to that of the AP. Specifically, this constituent appears to be marked at its right edge by a tone which is differently specified for yes-no questions and statements, i.e. a H edge tone for questions vs. a falling L tone for statements. We already know that in Neapolitan the nuclear LH rise is later in yes/no questions (L*+H) than in narrow focus statements (L+H*) (D’Imperio, 2000). Moreover, in long focus constituents the F₀ contour following the prenuclear rise falls rapidly in statements while it stays high in questions (D’Imperio, 2002, 2003). From informal observations, it appears that the F₀ contour within the region spanning from the prenuclear to the nuclear accent is differently realized in the two modalities. Specifically, in statements the F₀ rapidly falls from the H prenuclear peak to the region around the end of la mamma (Fig. 1, right panel), followed by a low plateau continuing until the beginning of the nuclear rise. In questions, on the other hand, the postaccentual region is characterized by a concave downward parabola, whose inflection point is also located around the end of φ. After this region, the slope becomes steeper in order to attend the low values for the L* of the L*+H nuclear accent (Fig. 1, left panel).

To verify whether such tonal differences are systematic, a pilot study was conducted in which a set of sentences was read by two Neapolitan speakers. Each sentence was composed of three constituents: an utterance-initial φ bearing a (L)H* prenuclear accent (la mamma, “the mom”); an unaccented verbal phrase (vuole vedere, “wants to see”) and an utterance-final φ (es. la Bina, “(the) Bina”, proper name) bearing a rising nuclear accent. The sentences were read either as yes/no questions or as (late) narrow focus statements. The predicted difference in shape and slope of the region immediately following the prenuclear rise (the first LH in the left and right panel of Fig. 1) was actually found, confirming our observations. Specifically, in statements after the prenuclear rise a low turning point can be located around the end of la mamma (Fig. 1, right panel), followed by a low plateau continuing until the beginning of the nuclear rise. In questions, on the other hand, the postaccentual region is characterized by a concave downward parabola, whose inflection point is also located around the end of φ. After this region, the slope becomes steeper in order to attend the low values for the L* of the L*+H nuclear accent (Fig. 1, left panel).

Results from tonal alignment and scaling suggest that this difference is not due to phonological/phonetic variation in the neighboring tones. Since interpolation between tonal targets is assumed to be linear within
the AM approach, we therefore asked whether the difference could be accounted for by the presence of an edge tone after the postaccentual rise, which would intervene between the H prenuclear peak and the L nuclear tone. Results from the combined use of linear (linear piecewise regression) and non-linear (logistic) modelling techniques suggest that a tonal target is present at the end of *la mamma*, and that this tone is differently specified for statements (L) and questions (H), thus mirroring some regularities already found in Neapolitan long focus constituents. We also argue that such a difference in tonal specification would help to enhance the phonological contrast between questions and statements, for which no morphosyntactic differences are exploited and whose main cue is the different alignment of the nuclear accent. Note also that in both intonation modalities, this phrasal tone was not accompanied by the percept of a break, as found at the end of the intermediate phrase (ip) or intonational phrase (IP).

In order to assess whether a constituent smaller than the ip can be tonally marked in Italian, we ran a second study in which we manipulated the intonation modality (questions vs. statements) and the absolute position of the target word (*benevolo*, “benevolent”) within the intonation phrase and the intermediate phrase (final vs non-final). Preliminary results from two out of four speakers confirm our expectations: when the target word is in non-final position within the ip, a phrasal tone occurred at its right edge, which is differently specified depending on intonation modality. Moreover, in both questions and statements, the length of the target word was progressively longer in non-final ip, final ip and final IP position, with different degrees of perceptual break accompanying the end of the three constituents. Our findings confirm the existence of a third level of phrasing in Neapolitan smaller than the ip and the IP, at the same time raising some problems for approach to intonational meaning which do not take into account the interrelation of tones within a tune.

![Figure 1: F0 contour of a yes/no question (left) and narrow focus statement (right) utterance for the sentence La mamma vuole vedere la Bina “The mother wants to see (the) Bina”. The dotted line marks the end of the first φ. The region following the prenuclear rise is indicated by the black arrow.](image)

References


